

[54] **CIRCULATORY ASSIST DEVICE AND SYSTEM**

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Related U.S. Application Data

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[58] Field of Search 128/1 D, 214 R, 273, 128/346, DIG. 3; 3/1.7; 417/412, 413, 474, 475, 479, 480; 137/527

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[57] **ABSTRACT**

A circulatory assist device and system are provided for controlling, wholly or partially, the pumping of blood through a blood vessel or vascular prosthesis. The assist device is comprised of an electrically operated plunger, or equivalent, which momentarily occludes the blood vessel to effect pumping. Preferably, a plurality of the assist devices are mounted adjacent each other and are sequentially actuated to sequentially occlude adjacent segments of the associated blood vessel, thereby creating a pumping action. The assist devices are implantable at various locations in the body and may be provided in appropriate size and number to effectively replace heart action. Valves may be utilized to enhance the efficiency or provide pumping with a single assist device.

8 Claims, 21 Drawing Figures

